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10/599,857	10/12/2006	Yoichi Nakagawa	41345	5813

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EXAMINER	
WYLLIE, CHRISTOPHER T	

ART UNIT	PAPER NUMBER
2419	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/599,857	NAKAGAWA ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER T. WYLLIE	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 October 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/12/2006*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED OFFICE ACTION

1. This action is in response to the communication received October 12th, 2006. Application 10/599,857 is a 371 of PCT/JP05/06316 (03/31/2005) and claims Foreign Priority to Japan Applications 2004-130842 (04/27/2004) and 2005-047702 (02/23/2005). Claims 1-17 have been entered and presented for examination.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5-9, 12, 13 and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Bantz et al. (US 5,507,035).

Regarding claim 1, Bantz et al. a wireless communication system comprising a base station and an associated station for conducting wireless packet communications **(column 3, lines 47-51 [the base station and mobile station use two antennas each in order to communicate efficiently])**, wherein the base station and the associated station have each a plurality of antennas **(column 3, lines 47-51 [the base station and mobile station use two antennas each in order to communicate with one another])**, wherein the base station comprises: a base station antenna selection unit which selects a packet transmit antenna from among the plurality of antennas **(see Figure 2, Controller 16 and column 3, lines 62-66 and column 4, lines 1-5 [the base station control unit records which of its two antennas are successful in receiving the packet; if both antenna receive the packet, then the antenna that received the packet with the highest received signal energy will be selected as the "preferred antenna" and be used to transmit to the mobile station])**; an antenna selection control unit which specifies the antenna to be selected by the base station antenna selection unit based on quality information of each transmission path established between the plurality of antennas and the antenna selected from among the plurality of antennas of the associated station **(see Figure 2, Controller 16 and column 3, lines 62-66 and column 4, lines 1-5 [the base station control unit records which of its two antennas are successful in receiving the packet; if both antenna receive the**

packet, then the antenna that received the packet with the highest received signal energy will be selected as the "preferred antenna"]); and a transmit control unit which transmits a packet to be transmitted to the associated station from the antenna selected by a base station antenna unit **(see Figure 2, Controller 16 and column 4, lines 4-5 [the controller of the base station uses the selected preferred antenna to transmit to the mobile station]),** and wherein the associated station comprises: an associated station antenna selection unit which selects one antenna from among the plurality of antennas **(column 4, lines 66-67 and column 5, lines 1-4 [when the base station transmits a packet, the mobile station determines which of its antennas received the packet with the higher received signal energy and uses that antenna to transmit back to the base station]);** a receive unit which receives the packet through the antenna selected by the associated station antenna unit **(see Figure 2, Controller 16 and column 5, lines 60-63 [the controller determines which antenna best received the packet and selects that antenna (column 4, lines 55-57 [the setup in Figure 2 is used for both the mobile station and the base station])]);** and an antenna switch control unit which controls so as to switch the antenna selected by the associated station antenna unit to a different antenna in response to receiving the packet by the reception unit **(column 5, lines 19-22 [if the mobile station does not receive a acknowledgement from the base station, it switches antennas and sends the packet again]).**

Regarding claim 5, Bantz et al. further discloses that the base station comprises an RSSI estimation unit which estimates RSSI's of the packets received through the

plurality of antennas from the antenna selected by the associated station antenna and wherein the quality information is the estimated RSSI **(see Figure 2, Controller 16 and column 3, lines 62-66 and column 4, lines 1-5 [the base station control unit records which of its two antennas are successful in receiving the packet; if both antenna receive the packet, then the antenna that received the packet with the highest received signal energy will be selected as the "preferred antenna" and be used to transmit to the mobile station])**.

Regarding claim 6, Bantz et al. further discloses that the packet contains a response request packet for making a request to send a receive response of the packet and a data packet **(see Figure 4, First Step Transmit To Unit "i" and Step 45 Wait For Acknowledgment [the base station transmits a packet to the mobile station which requires a response])**, wherein at the packet communication start time with the associated station, the transmit control unit transmits the response request packet to the associated station from the antenna selected by the base station antenna selection-unit **(see Figure 4, Step 41 and 44 [when a new communication with the mobile is started the base station randomly selects an antenna to be the "preferred antenna" to transmit the packet to the mobile])**, wherein the associated station receives the response request packet by the receive unit and transmits a response packet of a response to the response request packet to the base station from a different antenna to which the antenna is switched by the antenna switch control unit **(column 4, lines 66-67 and column 5, lines 1-7 [when the base station transmits to the mobile station, the mobile station determines which of its antennas received the packet**

with the highest received energy and uses that antenna to transmit to the base station; therefore the antenna chosen can be the same antenna the mobile is already switched to or another antenna]), wherein the base station comprises an RSSI estimation unit which estimates RSSIs of the response packets received at the plurality of antennas, wherein the quality information is the RSSI **(column 3, lines 62-66 and column 4, lines 1-5 [the base station receives the packet and determines which of its antennas received the packet with the highest received signal energy]**), and wherein the transmit control unit transmits the data packet to the associated station from the antenna selected by the base station antenna selection unit according to the specification based on the quality information **(column 4, lines 1-5 [the base station uses the antenna with the highest received signal strength to transmit to the mobile unit]**).

Regarding claim 7, Bantz et al. further discloses that the data packet contains the response request packet **(see Figure 4, First Step Transmit To Unit "i" and Step 45 Wait For Acknowledgment [the base station transmits a packet to the mobile station which requires a response from the mobile station]**).

Regarding claim 8, Bantz et al. further discloses that the plurality of antennas of the base station and the associated stations have different characteristics **(column 3, lines 1-13 [both the base station and the mobile station use "selection antenna diversity" where each antenna is separated by a "fading coherence distance"; each station receives and transmits multiple copies of the same packet; on the receiving side the antenna with the best received signal energy will be used to**

receive the packet, therefore each antenna will have a different received signal energy based on the location of the respective transmitter and the fading coherence distance]).

Regarding claim 9, Bantz discloses a wireless station for conducting wireless packet communications with an associated station **(column 3, lines 47-51 [the base station and mobile station use two antennas each in order to communicate efficiently])**, the wireless station comprising: a plurality of antennas **(column 3, lines 47-51 [the base station and mobile station use two antennas each in order to communicate with one another])**; an antenna selection unit which selects a packet transmit antenna from among the plurality of antennas **(see Figure 2, Controller 16 and column 3, lines 62-66 and column 4, lines 1-5 [the base station control unit records which of its two antennas are successful in receiving the packet; if both antenna receive the packet, then the antenna that received the packet with the highest received signal energy will be selected as the "preferred antenna" and be used to transmit to the mobile station])**; an antenna selection control which specifies the antenna to be selected by the antenna unit based on quality information of each transmission path established between the plurality of antennas and the antenna selected from among a plurality of antennas of the associated station**(see Figure 2, Controller 16 and column 3, lines 62-66 and column 4, lines 1-5 [the base station control unit records which of its two antennas are successful in receiving the packet; if both antenna receive the packet, then the antenna that received the packet with the highest received signal energy will be selected as the "preferred**

antenna"]); and a transmit control unit which transmits a packet to be transmitted to the associated station from the antenna selected by the antenna selection unit**(see Figure 2, Controller 16 and column 4, lines 4-5 [the controller of the base station uses the selected preferred antenna to transmit to the mobile station])**, wherein the antenna selected from among the plurality of antennas of the associated station is switched to a different antenna each time the packet is received in the associated station **(see Figure 2, Controller 16 and column 5, lines 60-63 [the controller determines which antenna best received the packet and selects that antenna (column 4, lines 55-57 [the setup in Figure 2 is used for both the mobile station and the base station]) therefore each time a packet is received by the mobile station it has a chance of being received on a different antenna bases on the received signal energy])**.

Regarding claim 12, Bantz et al. further discloses that the base station comprises an RSSI estimation unit which estimates RSSI's of the packets received through the plurality of antennas from the antenna selected by the associated station antenna and wherein the quality information is the estimated RSSI **(see Figure 2, Controller 16 and column 3, lines 62-66 and column 4, lines 1-5 [the base station control unit records which of its two antennas are successful in receiving the packet; if both antenna receive the packet, then the antenna that received the packet with the highest received signal energy will be selected as the "preferred antenna" and be used to transmit to the mobile station])**.

Regarding claim 13, Bantz et al. discloses a wireless station for conducting wireless packet communications with an associated station **(column 3, lines 47-51 [the base station and mobile station use two antennas each in order to communicate efficiently])**, the wireless station comprising: a plurality of antennas **(column 3, lines 47-51 [the base station and mobile station use two antennas each in order to communicate with one another])**; an antenna selection unit which selects one antenna from among the plurality of antennas **(see Figure 2, Controller 16 and column 3, lines 62-66 and column 4, lines 1-5 [the base station control unit records which of its two antennas are successful in receiving the packet; if both antenna receive the packet, then the antenna that received the packet with the highest received signal energy will be selected as the "preferred antenna" and be used to transmit to the mobile station])**; a receive unit which receives a packet transmitted from a packet transmit antenna selected from among a plurality of antennas of the associated station through the antenna selected by the antenna selection unit **(see Figure 2, Buffers 14 and 15 and column 4, lines 66-67 and column 5, lines 1-4 [when the base station transmits a packet, the mobile station determines which of its antennas received the packet with the higher received signal energy and uses that antenna to transmit back to the base station and uses the associated buffer to receive the packet])**; and an antenna switch control unit which controls so as to switch the antenna selected by the antenna selection unit to a different antenna in response to receiving the packet by the receive unit **(see Figure 2, Controller 16 and column 5, lines 60-63 [the controller determines which antenna best received the**

packet and selects that antenna (column 4, lines 55-57 [the setup in Figure 2 is used for both the mobile station and the base station]) therefore each time a packet is received by the mobile station it has a chance of being received on a different antenna bases on the received signal energy]).

Regarding claim 16, Bantz et al. further discloses that the plurality of antennas have different characteristics **column 3, lines 1-13 [both the base station and the mobile station use "selection antenna diversity" where each antenna is separated by a "fading coherence distance"; each station receives and transmits multiple copies of the same packet; on the receiving side the antenna with the best received signal energy will be used to receive the packet, therefore each antenna will have a different received signal energy based on the location of the respective transmitter and the fading coherence distance]).**

Regarding claim 17, Bantz et al. further discloses that the plurality of antennas have different characteristics **column 3, lines 1-13 [both the base station and the mobile station use "selection antenna diversity" where each antenna is separated by a "fading coherence distance"; each station receives and transmits multiple copies of the same packet; on the receiving side the antenna with the best received signal energy will be used to receive the packet, therefore each antenna will have a different received signal energy based on the location of the respective transmitter and the fading coherence distance]).**

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bantz et al. (US 5,507,035) in view of Hosur et al. (US 6,977,910).

Regarding claim 2, Bantz et al. discloses all the claimed subject matter recited in claim 1, but does not disclose that the base station comprises a transmit power control unit which controls transmit power of the packet based on the quality information. However, Hosur et al. further discloses such a feature **(column 6, lines 45-60 [the SIR circuit produces a ratio of the RSSI which is estimated with pilot signals and an ISSI (interference signal strength indicator) to create an SIR estimate; the SIR estimate is compared with a target SIR and based on this comparison the base station will increase or decrease the transmit power])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Hosur et al. into the system of Bantz et al. The method of Hosur et al. can be implemented by enabling the preferred antenna's transmit power to be varied based on the RSSI and the ISSI. The motivation for this is to create a better power management scheme for the base station.

Regarding claim 10, Bantz et al. discloses all the claimed subject matter recited in claim 9, but does not disclose that the base station comprises a transmit power control unit which controls transmit power of the packet based on the quality information. However, Hosur et al. further discloses such a feature **(column 6, lines 45-60 [the SIR circuit produces a ratio of the RSSI which is estimated with pilot signals and an ISSI (interference signal strength indicator) to create an SIR estimate; the SIR estimate is compared with a target SIR and based on this comparison the base station will increase or decrease the transmit power])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Hosur et al. into the system of Bantz et al. The method of Hosur et al. can be implemented by enabling the preferred antenna's transmit power to be varied based on the RSSI and the ISSI. The motivation for this is to create a better power management scheme for the base station.

7. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bantz et al. (US 5,507,035) in view of Crawford (US 2002/0164968).

Regarding claim 3, Bantz et al. discloses all the claimed subject matter recited in claim 1. However, Crawford discloses that the associated station comprises: a selection probability storage unit which stores the selection probability indicating what probability each of the plurality of antennas is to be selected at **(see figure 12B, Diversity Antenna Decision 642 and paragraph 0113, lines 16-21 [the chi value with the smallest value is selected the corresponding antenna is selected to transmit the next frame; the chi value is based on the bit error probability (Q); the Diversity Antenna Decision unit stores these values until a selection is made])**; a receive quality information storage unit which stores receive quality information associating the receive quality of the packet received at the receive unit and the antenna receiving the packet with each other **(paragraph 0112, lines 13-17 [memories 626, 628, 630 and 632 store the bit error probabilities of each respective antenna])**; and a selection probability update unit which updates the selection probability based on the receive quality information, and wherein the antenna switch

control unit determines the different antenna based on the selection probability **(paragraph 0111, lines 1-2 and 9-12 [the process runs during every reception of the diversity selection portion of the frame; the process includes recalculating values of the bit error probabilities (Q) used to calculate the chi values that are used to choose the antenna; therefore, a different antenna can be chosen based on the recalculated Q values])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Crawford into the system of Bantz et al. The method of Crawford can be implemented by enabling the mobile station to choose an antenna based on the chi value associated with the smallest bit error probability. The motivation for this is to ensure that the response packet will be transmitted on the best antenna suited for the transmission.

Regarding claim 14, Bantz et al. discloses all the claimed subject matter recited in claim 13. However, Crawford discloses that the associated station comprises: a selection probability storage unit which stores the selection probability indicating what probability each of the plurality of antennas is to be selected at **(see figure 12B, Diversity Antenna Decision 642 and paragraph 0113, lines 16-21 [the chi value with the smallest value is selected the corresponding antenna is selected to transmit the next frame; the chi value is based on the bit error probability (Q); the Diversity Antenna Decision unit stores these values until a selection is made])**; a receive quality information storage unit which stores receive quality information associating the receive quality of the packet received at the receive unit and the

antenna receiving the packet with each other **(paragraph 0112, lines 13-17 [memories 626, 628, 630 and 632 store the bit error probabilities of each respective antenna])**; and a selection probability update unit which updates the selection probability based on the receive quality information, and wherein the antenna switch control unit determines the different antenna based on the selection probability **(paragraph 0111, lines 1-2 and 9-12 [the process runs during every reception of the diversity selection portion of the frame; the process includes recalculating values of the bit error probabilities (Q) used to calculate the chi values that are used to choose the antenna; therefore, a different antenna can be chosen based on the recalculated Q values])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Crawford into the system of Bantz et al. The method of Crawford can be implemented by enabling the mobile station to choose an antenna based on the chi value associated with the smallest bit error probability. The motivation for this is to ensure that the response packet will be transmitted on the best antenna suited for the transmission.

8. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bantz et al. (US 5,507,035) in view of Wang et al. (2002/0003774) in view of Subrahmanya et al. (US 2003/0128678).

Regarding claim 4, Bantz et al. discloses all the claimed subject matter recited in claim 1, but does not disclose that the base station comprises a space-time coding unit

which performs space-time coding of the packet to generate a plurality of coded packets, wherein the transmit control unit transmits the plurality of coded packets from the selected antennas to the associated station at the same time, and wherein the associated station comprises a combining unit which combines the plurality of coded packets received in the reception unit. However, Wang et al. discloses these features **(paragraph 0002, lines 21-29 [the base station uses space time coding to perform transmit diversity (the same data is transmitted by more the one antenna at the same time)]); (paragraph 0003, lines 1-6 [the data streams are transmitted to the mobile station at the same time as two parallel streams]); (paragraph 0004, lines 9-18 [the receiving mobile is able to combine the two streams of data from the two transmitting antennas to obtain a better transmission quality])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Wang et al. into the system of Bantz et al. The method Wang et al. can be implemented by enabling the mobile station to combine the two streams the two streams of data from the two transmitting antennas to obtain a better transmission quality.

The references as applied above do not disclose that the base station antenna selection unit selects as many antennas as the number responsive to the number of the coded packets. However, Subrahmanya et al. discloses such a feature **(paragraph 0031 [the coded data is separated into two streams and are transmitted from two of the base station's antennas])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Subrahmanya et al. into the system of the references as applied above. The method of Subrahmanya et al. can be implemented by enabling the bases station to separate the data into equal separate streams and use the same amount of antennas as there are streams. The motivation for this is to obtain a better transmission quality.

Regarding claim 11, Bantz et al. discloses all the claimed subject matter recited in claim 9, but does not disclose that the base station comprises a space-time coding unit which performs space-time coding of the packet to generate a plurality of coded packets, wherein the transmit control unit transmits the plurality of coded packets from the selected antennas to the associated station at the same time. However, Wang et al. discloses these features **(paragraph 0002, lines 21-29 [the base station uses space time coding to perform transmit diversity (the same data is transmitted by more the one antenna at the same time)]); (paragraph 0003, lines 1-6 [the data streams are transmitted to the mobile station at the same time as two parallel streams])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Wang et al. into the system of Bantz et al. The method Wang et al. can be implemented by enabling the mobile station to combine the two streams the two streams of data from the two transmitting antennas to obtain a better transmission quality.

The references as applied above do not disclose that the base station antenna selection unit selects as many antennas as the number responsive to the number of the

coded packets. However, Subrahmanya et al. discloses such a feature **(paragraph 0031 [the coded data is separated into two streams and are transmitted from two of the base station's antennas])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Subrahmanya et al. into the system of the references as applied above. The method of Subrahmanya et al. can be implemented by enabling the bases station to separate the data into equal separate streams and use the same amount of antennas as there are streams. The motivation for this is to obtain a better transmission quality.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bantz et al. (US 5,507,035) in view of Wang et al. (2002/0003774)

Regarding claim 15, Bantz et al. discloses all the claimed subject matter recited in claim 13, but does not disclose that wherein the packet transmitted from the associated station is a plurality of coded packets generated by performing space-time coding of the packet, and wherein the wireless station comprises a combining unit which combines the plurality of coded packets received in the unit. However, Wang et al. discloses these features **(paragraph 0002, lines 21-29 [the station uses space time coding to perform transmit diversity (the same data is transmitted by more the one antenna at the same time)]); (paragraph 0004, lines 9-18 [the receiving station is able to combine the two streams of data from the two transmitting antennas to obtain a better transmission quality])**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Wang et al. into the system of Bantz et al. The method Wang et al. can be implemented by enabling the mobile station to use space time coding when transmitting to the base station for the first time. The motivation for this is to increase the transmission quality and probability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER T. WYLLIE whose telephone number is (571) 270-3937. The examiner can normally be reached on Monday through Friday 8:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher T. Wyllie/
Examiner, Art Unit 2419

/CTW/
Examiner, Art Unit 2419

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2419